

WHAT IS CLAIMED IS:

1. An organic thin film switching element comprising:
an insulative film;
an organic thin film made of an organic material, the insulative film and the organic thin film being laminated one over the other;
a pair of opposing gate electrodes sandwiching a laminate composed of the insulative film and the organic thin film; and
an intermediate electrode disposed between the organic thin film and the insulative film.
2. An organic thin film switching element according to claim 1, wherein the organic material is an insulating organic compound.
3. An organic thin film switching element according to claim 2, wherein the organic material has a hole transport property.
4. An organic thin film switching element according to claim 2, wherein the organic material has an electron transport property.
5. An organic thin film switching element according to claim 2, wherein the organic material has a hole and electron transport property.
6. An organic thin film switching element according to claim 1, wherein the intermediate electrode of the organic thin film switching element comprises a pair of opposing electrodes spaced apart from each other, the opposing electrodes being positioned on an interface between the organic thin film and the

insulative film between the gate electrodes.

7. An organic thin film switching element according to claim 1, wherein the intermediate electrode and the gate electrode for injecting carriers of the organic thin film switching element are made of a material having a high work function in a case that the carriers are holes.

8. An organic thin film switching element according to claim 7, wherein the intermediate electrode of the organic thin film switching element comprises a laminate including a first layer made of a material having a work function substantially equal to that of the organic thin film, and a second layer made of a material having a work function lower than that of the first layer.

9. An organic thin film switching element according to claim 1, wherein the intermediate electrode and the gate electrode for injecting carriers of the organic thin film switching element are made of a material having a low work function in a case that the carriers are electrons.

10. An organic thin film switching element according to claim 9, wherein the intermediate electrode of the organic thin film switching element comprises a laminate including a first layer made of a material having a work function substantially equal to that of the organic thin film, and a second layer made of a material having a work function higher than that of the first layer.

11. An organic electroluminescence element display device having a display array formed of a plurality of light

emitting sections, comprising:

a substrate having a plurality of first display electrodes formed on a surface in correspondence to the light emitting sections;

an organic material layer formed on each of the first display electrodes and including at least one organic electroluminescence material layer capable of emitting light by injecting electrons or holes thereinto;

a second display electrode formed in common on the organic material layer; and

an organic thin film switching element formed on the substrate and connected to at least one of the first and second display electrodes, the organic thin film switching element including;

an insulative film;

an organic thin film made of an organic material, the insulative film and the organic thin film being laminated one over the other;

a pair of opposing gate electrodes sandwiching a laminate composed of the insulative film and the organic thin film; and

an intermediate electrode disposed between the organic thin film and the insulative film.

12. An organic electroluminescence element display device according to claim 11, wherein the organic thin film made of an organic material of the organic thin film switching element is formed of a portion of the organic material layer.

13. An organic electroluminescence element display device according to claim 11, wherein the light emitting sections are arranged in matrix.

14. An organic electroluminescence element display device according to claim 11, further comprising a capacitor formed on the substrate, and connected to at least one of the first and second display electrodes and the organic thin film switching element.

15. An organic electroluminescence element display device according to claim 11, wherein the substrate and the first display electrode are transparent.

16. An organic electroluminescence element display device according to claim 11, wherein the intermediate electrode of the organic thin film switching element comprises a pair of opposing electrodes spaced apart from each other, the opposing electrodes being positioned on an interface between the organic thin film and the insulative film between the gate electrodes.

17. An organic electroluminescence element display device according to claim 11, wherein the intermediate electrode and the gate electrode for injecting carriers of the organic thin film switching element are made of a material having a high work function in a case that the carriers are holes.

18. An organic electroluminescence element display device according to claim 17, wherein the intermediate electrode of the organic thin film switching element comprises a laminate including a first layer made of a material having a work function substantially equal to that of the organic thin film, and a second

layer made of a material having a work function lower than that of the first layer.

19. An organic electroluminescence element display device according to claim 11, wherein the intermediate electrode and the gate electrode for injecting carriers of the organic thin film switching element are made of a material having a low work function in a case that the carriers are electrons.

20. An organic electroluminescence element display device according to claim 19, wherein the intermediate electrode of the organic thin film switching element comprises a laminate including a first layer made of a material having a work function substantially equal to that of the organic thin film, and a second layer made of a material having a work function higher than that of the first layer.